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Martin Baumert

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EXAMINER

AUGHENBAUGH, WALTER

ART UNIT

PAPER NUMBER

1794

NOTIFICATION DATE

DELIVERY MODE

10/19/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@mwzb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/804,191	<b>Applicant(s)</b> BAUMERT ET AL.	
	<b>Examiner</b> WALTER B. AUGHENBAUGH	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-22, 24-28, 30-34 and 36 is/are pending in the application.
- 4a) Of the above claim(s) 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-18, 21, 22, 24-28, 30-34 and 36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

1. The cover sheet of the previous Office Action mailed June 10, 2009 incorrectly indicated that the Office Action was a Final Office Action. The "Final" box was inadvertently X-ed on the cover sheet. The Office Action was not intended to be a Final Office Action: note that the form paragraph used by the Office to indicate that the Office Action is a Final action was not included in the Conclusion section of the Office Action.

### ***Acknowledgement of Applicant's Amendments***

2. The amendments made in claims 1, 28, 34 and 36 in the Amendment filed September 10, 2009 have been received and considered by Examiner.

3. The amendment to the specification in the Amendment filed September 10, 2009 has been received and considered by Examiner.

### ***WITHDRAWN OBJECTION***

4. The objection to the specification made of record in the previous Office Action mailed June 10, 2009 has been withdrawn due to Applicant's amendment to the specification in the Amendment filed September 10, 2009.

### ***WITHDRAWN REJECTIONS***

5. All 35 U.S.C. 112, 102 and 103 rejections made of record in the previous Office Action mailed June 10, 2009 have been withdrawn due to Applicant's addition of "from a polyamide having an amine end group" in independent claims 1, 34 and 36 in the Amendment filed September 10, 2009.

**NEW REJECTIONS*****Double Patenting***

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-7, 10-18, 22, 24, 25, 27, 28, 30-34 and 36 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 21 of U.S. Patent No. 6,875,520. Although the conflicting claims are not identical, they are not patentably distinct from each other because an article comprising two or more layers of the composition comprising the polyolefin-polyamide graft copolymer falls within the scope of claim 21 of US ‘520 since the polyolefin-polyamide graft copolymer is a polyamide (in regard to layer (1)), so claim 21 of US ‘520 reads on Applicant’s claims.

In further regard to independent claim 1, claims 4, 13 and 14 of US ‘520 recite ranges for the average number of moles of unsaturated monomer X attached to the polyolefin backbone that encompass the claimed range (including a minimum value, 1.3 that is the same as the

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claimed minimum value), so it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a polyamide graft having an amine end group having an average number of moles of unsaturated monomer X attached to the polyolefin backbone that corresponds to the claimed amount to form the graft copolymer based on the teaching of claims 4, 13 and 14 of US '520 that this is a known amount to use in forming a graft copolymer that corresponds to the claimed graft copolymer.

In further regard to independent claim 34, claim 16 of US '520 recites a molar mass range for the end group that is identical to the molar mass range recited in claim 34, so it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a polyamide graft having an amine end group having a molar mass in the claimed range based on the teaching of claim 16 of US '520 that this is a known molar mass for a polyamide having an amine end group to use in forming a graft copolymer that corresponds to the claimed graft copolymer.

In further regard to independent claim 36, the graft copolymer of Court et al. has the claimed structure (nanostructured organization with polyamide lamellae having a thickness of between 10 and 50 nanometers) because Court. et al. discloses a polyolefin-polyamide graft copolymer that is produced in the same way that the polyolefin-polyamide graft copolymer of the instant application is produced, and that has the same structure as the polyolefin-polyamide graft copolymer of the instant application (see entire Court. et al. reference, including col. 8, lines 1-4 and col. 5, lines 5-16).

In regard to the dependent claims, Court et al. teach the limitations recited in the dependent claims. See claims of US '520.

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***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1, 33, 34 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to independent claims 1, 34 and 36, the recitation “at least one polyamide graft from a polyamide having an amine end group” renders the claim indefinite because it cannot be ascertained whether or not Applicant intends to require that the polyamide graft of the graft copolymer in its final form comprises the amine end group. The word “from” in “polyamide graft from a polyamide having an amine end group” suggests that the amine end group may not exist in the final form of the graft copolymer. Clarification and/or correction is required.

In regard to claim 33, claim 33 depends upon cancelled claim 29, so it cannot be ascertained whether or not Applicant intends to claim the subject matter recited in claim 33.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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11. Claims 1-7, 10-18, 22, 24, 25, 27, 28, 30-34 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Court et al. (USPN 6,875,520).

In regard to independent claims 1 and 15, Court et al. teach the claimed multilayer structure (see entire Court. et al. reference, including col. 6, lines 46-50 and col. 5, lines 12-16). Court. et al. teach that the article comprises at least one layer of the composition comprising the polyolefin-polyamide graft copolymer (col. 3, lines 4-10), and an article comprising two or more layers of the composition comprising the polyolefin-polyamide graft copolymer since the polyolefin-polyamide graft copolymer is a polyamide (in regard to layer (1)), so the embodiments of Court et al. comprising two or more layers of the composition comprising the polyolefin-polyamide graft copolymer anticipates the claim. Court et al. teach that the polyamide graft is from a polyamide having an amine end group (see, for example, col. 21, lines 35-36 and col. 5, lines 12-16). The polyolefin-polyamide graft copolymer of Court et al. (which is a polymer) consists of the polyolefin-polyamide graft copolymer, so “the polymer consists of [the] graft copolymer having polyamide blocks”.

In regard to claim 2, the tarpaulin or geomembrane of claim 21 of Court et al. (col. 22, lines 57-58) having two or more layers of the blend of claim 1 corresponds to the structure claimed in claim 2.

In regard to claims 3 and 13, Court et al. teach that the polyolefin backbone comprises an ethylene/alkyl(meth) acrylate copolymer (col. 8, lines 21-26) (which is a polyolefin copolymer).

In regard to claims 4 and 14, Court et al. teach that X as recited in Applicant’s claim 1 (and claim 1 of Court et al.) is an unsaturated carboxylic acid anhydride (see, for example, col. 1, lines 7-18).

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In regard to claim 5, Court et al. teach that the recited copolymers are suitable copolymers for the polyolefin backbone (col. 22, lines 26-29).

In regard to claim 6, the tarpaulin or geomembrane of claim 21 of Court et al. (col. 22, lines 57-58) corresponds to a multilayered film.

In regard to claim 7, the recitation “intended to be in contact with the stored or transported fluid” is an intended use phrase that has been given little patentable weight, since it has been held that a recitation with respect to the manner in which a claimed article is intended to be employed does not differentiate the claimed article from a prior art article satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQd 1647 (1987). Furthermore, a multilayer film does not per se have an inner layer. Regardless, the layer of Court et al. that corresponds to the claims layer (2) corresponds to the innermost layer (a surface layer: a layer that is bonded to another layer only on one side such that the unbonded surface of the layer is a surface of the multilayer article).

In regard to claims 10 and 17, the tarpaulin or geomembrane of claim 21 of Court et al. (col. 22, lines 57-58) having three or more layers of the blend of claim 1 corresponds to the structure claimed in claim 10.

In regard to claims 11 and 18, the tarpaulin or geomembrane of claim 21 of Court et al. (col. 22, lines 57-58) having four or more layers of the blend of claim 1 corresponds to the structure claimed in claim 11.

In regard to claim 12, the tarpaulin or geomembrane of claim 21 of Court et al. (col. 22, lines 57-58) having five or more layers of the blend of claim 1 corresponds to the structure claimed in claim 12.



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In regard to claim 16, Court et al. teach that the recited polyamides are suitable polyamides for the blend (see, for example, col. 6, line 66-col. 7, line 5).

In regard to claim 22, the claimed relative amount range for the polyamide falls within the range taught by Court et al. (col. 21, lines 27-51).

In regard to claim 24, the tarpaulin or geomembrane of claim 21 of Court et al. having two or more layers (col. 22, lines 57-58) corresponds to a multilayered film.

In regard to claim 25, the recitation “intended to be in contact with the stored or transported fluid” is an intended use phrase that has been given little patentable weight, since it has been held that a recitation with respect to the manner in which a claimed article is intended to be employed does not differentiate the claimed article from a prior art article satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQd 1647 (1987). Furthermore, a multilayer film does not per se have an inner layer. Regardless, the layer of Court et al. that corresponds to the claims layer (2) corresponds to the innermost layer (a surface layer: a layer that is bonded to another layer only on one side such that the unbonded surface of the layer is a surface of the multilayer article).

In regard to claim 27, note that the tie layer is not required by claim 1, or by the language of claim 27. Regardless, the tarpaulin or geomembrane of claim 21 of Court et al. (col. 22, lines 57-58) having three or more layers of the blend of claim 1 corresponds to the structure claimed in claim 11.

In regard to claim 28, Court et al. teach that a ratio of 80/20 is a suitable polyolefin/polyamide ratio (col. 9, line 8).

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In regard to claim 30, Court et al. teach 2400 and 2500 g/mol as suitable molar masses for the polyamide having an amine end group (col. 8, lines 34-47 and col. 9, lines 25-34), values that fall within the claimed range of between 1,000 and 5,000.

In regard to claims 31-33, the graft copolymer of Court et al. has the claimed structure (nanostructured organization with polyamide lamellae having a thickness of between 10 and 50 nanometers) because Court. et al. discloses a polyolefin-polyamide graft copolymer that is produced in the same way that the polyolefin-polyamide graft copolymer of the instant application is produced, and that has the same structure as the polyolefin-polyamide graft copolymer of the instant application (see entire Court. et al. reference, including col. 8, lines 1-4 and col. 5, lines 5-16).

In further regard to claim 33, Court et al. teach 2400 and 2500 g/mol as suitable molar masses for the polyamide having an amine end group (col. 8, lines 34-47 and col. 9, lines 25-34), values that fall within the claimed range of between 1,000 and 5,000.

In regard to independent claim 34, Court et al. teach the claimed multilayer structure (see entire Court. et al. reference, including col. 7, lines 30-32 and col. 5, lines 12-16). Court. et al. teach that the article comprises at least one layer of the composition comprising the polyolefin-polyamide graft copolymer (col. 3, lines 4-10), and an article comprising two or more layers of the composition comprising the polyolefin-polyamide graft copolymer since the polyolefin-polyamide graft copolymer is a polyamide (in regard to layer (1)), so the embodiments of Court et al. comprising two or more layers of the composition comprising the polyolefin-polyamide graft copolymer anticipates the claim. Court et al. teach that the polyamide graft is from a

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polyamide having an amine end group (see, for example, col. 21, lines 35-36 and col. 5, lines 12-16). The polyolefin-polyamide graft copolymer of Court et al. (which is a polymer) consists of the polyolefin-polyamide graft copolymer, so “the polymer consists of [the] graft copolymer having polyamide blocks”. Court et al. teach 2400 and 2500 g/mol as suitable molar masses for the polyamide having an amine end group (col. 8, lines 34-47 and col. 9, lines 25-34), values that fall within the claimed range of between 1,000 and 5,000.

In regard to independent claim 36, Court et al. teach the claimed multilayer structure (see entire Court. et al. reference, including col. 8, lines 1-4 and col. 5, lines 12-16). Court. et al. teach that the article comprises at least one layer of the composition comprising the polyolefin-polyamide graft copolymer (col. 3, lines 4-10), and an article comprising two or more layers of the composition comprising the polyolefin-polyamide graft copolymer since the polyolefin-polyamide graft copolymer is a polyamide (in regard to layer (1)), so the embodiments of Court et al. comprising two or more layers of the composition comprising the polyolefin-polyamide graft copolymer anticipates the claim. Court et al. teach that the polyamide graft is from a polyamide having an amine end group (see, for example, col. 21, lines 35-36 and col. 5, lines 12-16). The polyolefin-polyamide graft copolymer of Court et al. (which is a polymer) consists of the polyolefin-polyamide graft copolymer, so “the polymer consists of [the] graft copolymer having polyamide blocks”. The graft copolymer of Court et al. has the claimed structure (nanostructured organization with polyamide lamellae having a thickness of between 10 and 50 nanometers) because Court. et al. discloses a polyolefin-polyamide graft copolymer that is produced in the same way that the polyolefin-polyamide graft copolymer of the instant

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application is produced, and that has the same structure as the polyolefin-polyamide graft copolymer of the instant application (see entire Court. et al. reference, including col. 8, lines 1-4 and col. 5, lines 5-16).

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 1-8, 10-18, 21, 22, 24-28, 30-34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz et al. (USPN 6,794,048) in view of Court et al. (USPN 6,875,520).

In regard to independent claim 1, Schmitz et al. teach a multilayer structure comprising a first layer (layer I of Schmitz et al.) comprising a polyamide (col. 1, lines 51-54) and a second layer (layer II of Schmitz et al.) comprising a graft copolymer having polyamide blocks, a polyolefin backbone, and a polyamide graft where the structure and composition of the graft

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copolymer corresponds to that of the claimed graft copolymer in its final form (col. 1, lines 51-67 and col. 3, lines 7-37). The graft copolymer is obtained by reaction between a polyamide having an amine end group and the residue of the unsaturated monomer having a functional group capable of reacting with the amine end group of the polyamide (col. 3, lines 15-30), and the unsaturated monomer is attached to the polyolefin backbone by grafting or copolymerization via its double bond (col. 3, lines 24-30).

Schmitz et al. fail to teach that the polyamide graft is from a polyamide having an amine end group and that the average number of moles of the unsaturated monomer attached to the polyolefin backbone is 1.3 to 7 moles per mole of chain.

Court et al. teach the claimed multilayer structure (see entire Court. et al. reference, including col. 6, lines 46-50 and col. 5, lines 12-16). Court. et al. teach that the article comprises at least one layer of the composition comprising the polyolefin-polyamide graft copolymer (col. 3, lines 4-10), and an article comprising two or more layers of the composition comprising the polyolefin-polyamide graft copolymer since the polyolefin-polyamide graft copolymer is a polyamide (in regard to layer (1)), so the embodiments of Court et al. comprising two or more layers of the composition comprising the polyolefin-polyamide graft copolymer anticipates the claim. Court et al. teach that the polyamide graft is from a polyamide having an amine end group (see, for example, col. 21, lines 35-36 and col. 5, lines 12-16). The polyolefin-polyamide graft copolymer of Court et al. (which is a polymer) consists of the polyolefin-polyamide graft copolymer, so “the polymer consists of [the] graft copolymer having polyamide blocks”.

Court et al. teach that the polyamide graft is from a polyamide having an amine end group results in exceptional thermomechanical properties (see, for example, col. 2, lines 1-7).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the polyolefin-polyamide graft copolymer having a polyamide graft that is from a polyamide having an amine end group of Court as the polyolefin-polyamide graft copolymer of Schmitz et al. since polyolefin-polyamide graft copolymer having a polyamide graft that is from a polyamide having an amine end group is a known polyolefin-polyamide graft copolymer for exceptional thermomechanical properties as taught by Schmitz et al.

In regard to the claimed range of average number of moles of the unsaturated monomer attached to the polyolefin backbone, Schmitz et al. disclose that from 30 to 70 parts by volume of polyamide may be reacted with from 0.1 to 70 parts by volume of the polyolefin containing functional groups (col. 3, lines 38-48). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have varied the amount of unsaturated monomer having a functional group relative to the amount of chain in order to vary the amount of polyamide grafts attached to the polyolefin backbone (since the polyamide grafts are attached to the polyolefin backbone via the unsaturated monomer) in order to achieve the optimal ratio of polyamide to polyolefin depending on the particular desired end result, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. MPEP 2144.05 II.B.

In regard to claim 2, Schmitz et al. teach that the multilayer structure comprises a third layer (layer III of Schmitz et al.) that comprises a polyolefin (col. 1, line 51-col. 2, line 2 and col. 2, lines 52-65).

In regard to claim 4, Schmitz et al. teach that the unsaturated monomer is an unsaturated carboxylic acid anhydride (col. 3, lines 15-30, particularly, line 22), and Court et al. teach that X as recited in Applicant's claim 1 (and claim 1 of Court et al.) is an unsaturated carboxylic acid anhydride (see, for example, col. 1, lines 7-18).

In regard to claim 5, Court et al. teach that the recited copolymers are suitable copolymers for the polyolefin backbone (col. 22, lines 26-29).

In regard to claim 6, Schmitz et al. teach that the structure is in the form of a tank (a container for storing liquids or gases would be considered a tank), container, film or tube (pipes, lines) (col. 7, lines 36-50).

In regard to claim 7, Schmitz et al. teach an additional layer (additional interior layer of Schmitz et al.) as the innermost layer (i.e. the layer that is in direct contact with the interior of the container) (col. 7, lines 51-55).

In regard to claim 8, Schmitz et al. teach the structure is a tube (pipes, lines) (col. 7, lines 36-47) and that the tube comprises an additional layer (additional interior layer of Schmitz et al.) as the innermost layer (i.e. the layer that is in direct contact with the interior of the container) (col. 7, lines 51-55). The recitation "for use in a cooling circuit for an internal combustion engine" is an intended use phrase that has not been given patentable weight, since it has been held that a recitation with respect to the manner in which a claimed article is intended to be employed does not differentiate the claimed article from a prior art article satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQd 1647 (1987).

In regard to claim 10, Schmitz et al. teach a multilayer structure comprising a tie layer (additional bonding agent, col. 8, lines 8-12) and a layer (layer II of Schmitz et al.) comprising a

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graft copolymer, where the graft copolymer comprises a polyolefin backbone functionalized by an unsaturated monomer and at least one polyamide graft (col. 1, lines 51-67 and col. 3, lines 7-37), where the graft copolymer is obtained by reaction between a polyamide having an amine end group and the residue of the unsaturated monomer having a functional group capable of reacting with the amine end group of the polyamide (col. 3, lines 15-30), and where the unsaturated monomer is attached to the polyolefin backbone by grafting or copolymerization via its double bond (col. 3, lines 24-30).

As discussed above in regard to claim 1, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the polyolefin-polyamide graft copolymer having a polyamide graft that is from a polyamide having an amine end group of Court as the polyolefin-polyamide graft copolymer of Schmitz et al. since polyolefin-polyamide graft copolymer having a polyamide graft that is from a polyamide having an amine end group is a known polyolefin-polyamide graft copolymer for exceptional thermomechanical properties as taught by Schmitz et al.

In regard to claim 11, Schmitz et al. teach a multilayer structure comprising a polyamide or a polyolefin layer (sheathing layer of Schmitz et al., col. 8, lines 4-18) superposed on a layer (layer II of Schmitz et al.) comprising a graft copolymer, where the graft copolymer comprises a polyolefin backbone functionalized by an unsaturated monomer and at least one polyamide graft (col. 1, lines 51-67, col. 3, lines 7-37 and col. 8, lines 4-18), where the graft copolymer is obtained by reaction between a polyamide having an amine end group and the residue of the unsaturated monomer having a functional group capable of reacting with the amine end group of the polyamide (col. 3, lines 15-30), and where the unsaturated monomer is attached to the



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polyolefin backbone by grafting or copolymerization via its double bond (col. 3, lines 24-30).

Schmitz et al. teach that the multilayer structure comprises a tie layer (additional bonding agent, col. 8, lines 8-12) placed between the polyamide or a polyolefin layer (sheathing layer of Schmitz et al.) and the layer (layer II of Schmitz et al.) comprising the graft copolymer (col. 1, lines 51-67, col. 3, lines 7-37 and col. 8, lines 4-18).

As discussed above in regard to claim 1, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the polyolefin-polyamide graft copolymer having a polyamide graft that is from a polyamide having an amine end group of Court as the polyolefin-polyamide graft copolymer of Schmitz et al. since polyolefin-polyamide graft copolymer having a polyamide graft that is from a polyamide having an amine end group is a known polyolefin-polyamide graft copolymer for exceptional thermomechanical properties as taught by Schmitz et al.

In regard to claim 12, Schmitz et al. teach a multilayer structure comprising a first layer (sheathing layer of Schmitz et al.) comprising a polyamide (polyether ester amides or polyether amides, col. 8, lines 17-18) (col. 8, lines 4-18), a tie layer (additional bonding agent, col. 8, lines 8-12) and a layer (layer II of Schmitz et al.) comprising a graft copolymer, where the graft copolymer comprises a polyolefin backbone functionalized by an unsaturated monomer and at least one polyamide graft (col. 1, lines 51-67 and col. 3, lines 7-37), where the graft copolymer is obtained by reaction between a polyamide having an amine end group and the residue of the unsaturated monomer having a functional group capable of reacting with the amine end group of the polyamide (col. 3, lines 15-30), and where the unsaturated monomer is attached to the polyolefin backbone by grafting or copolymerization via its double bond (col. 3, lines 24-30).

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Schmitz et al. teach a multilayer structure further comprises a polyolefin layer (layer III of Schmitz et al.) superposed on the layer comprising the graft copolymer and a tie layer (layer I of Schmitz et al.) placed between the layer comprising the graft copolymer and the polyolefin layer (layer III of Schmitz et al.) (col. 1, line 51-col. 2, line 2).

As discussed above in regard to claim 1, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the polyolefin-polyamide graft copolymer having a polyamide graft that is from a polyamide having an amine end group of Court as the polyolefin-polyamide graft copolymer of Schmitz et al. since polyolefin-polyamide graft copolymer having a polyamide graft that is from a polyamide having an amine end group is a known polyolefin-polyamide graft copolymer for exceptional thermomechanical properties as taught by Schmitz et al.

In regard to claim 13, Schmitz et al. teach that the polyolefin backbone is a polyolefin homopolymer or copolymer (col. 3, lines 10-52), and Court et al. teach that the polyolefin backbone comprises an ethylene/alkyl(meth) acrylate copolymer (col. 8, lines 21-26) (which is a polyolefin copolymer).

In regard to claim 14, Schmitz et al. teach that an unsaturated epoxide or an unsaturated carboxylic acid anhydride are suitable monomers as the unsaturated monomer (col. 3, lines 15-30, particularly, lines 22-23), and Court et al. teach that X as recited in Applicant's claim 1 (and claim 1 of Court et al.) is an unsaturated carboxylic acid anhydride (see, for example, col. 1, lines 7-18).

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In regard to claim 15, Schmitz et al. teach that the first layer (layer I of Schmitz et al.) is formed from a polyamide/polyolefin blend having a polyamide matrix (col. 1, line 54 and col. 2, lines 37-52, particularly, col. 2, lines 41-44).

In regard to claim 16, Schmitz et al. explicitly teach that all of the claimed polyamides except PA-6/6,6 are suitable polyamides for the first layer (layer I of Schmitz et al.).

In regard to claims 17 and 18, Schmitz et al. teach the structure as discussed above in regard to claims 10 and 11. Polyether ester amides and polyether amides are taught as suitable materials for the additional bonding agent (col. 8, lines 4-18), and polyether ester amides and polyether amides are copolyamides because they are copolymers that comprise amide repeating units.

In regard to claim 21, Schmitz et al. teach that the first layer (layer I of Schmitz et al.) comprises a blend of a polyamide and at least one copolymer having polyamide blocks and polyether blocks (col. 2, lines 33-38 and lines 3-7).

In regard to claim 22, Schmitz et al. teach the multilayer structure as discussed above in regard to claim 15. Schmitz et al. teach that the percentage of polyamide in the blend is less than 100% (since it is a blend) and greater than or equal to 60% by weight (since Schmitz et al. teach that the percentage of “other thermoplastic[]” is “[u]p to 40% by weight”, col. 2, lines 37-41), a range that overlaps with the claimed range of 40 to 75% by weight.

In regard to claim 24, Schmitz et al. teach that the structure is in the form of a tank (a container for storing liquids or gases would be considered a tank), container, film or tube (pipes, lines) (col. 7, lines 36-50).

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In regard to claim 25, Schmitz et al. teach an additional layer (additional interior layer of Schmitz et al.) as the innermost layer (i.e. the layer that is in direct contact with the interior of the container) (col. 7, lines 51-55).

In regard to claim 26, Schmitz et al. teach the structure is a tube (pipes, lines) (col. 7, lines 36-47) and that the tube comprises an additional layer (additional interior layer of Schmitz et al.) as the innermost layer (i.e. the layer that is in direct contact with the interior of the container) (col. 7, lines 51-55). The recitation “for use in a cooling circuit for an internal combustion engine” is an intended use phrase that has not been given patentable weight, since it has been held that a recitation with respect to the manner in which a claimed article is intended to be employed does not differentiate the claimed article from a prior art article satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQd 1647 (1987).

In regard to claim 27, Schmitz et al. teach the structure as discussed above in regard to claims 1, 10 and 11. Polyether ester amides and polyether amides are taught as suitable materials for the additional bonding agent (col. 8, lines 4-18), and polyether ester amides and polyether amides are copolyamides because they are copolymers that comprise amide repeating units.

In regard to claim 28, Court et al. teach that a ratio of 80/20 is a suitable polyolefin/polyamide ratio (col. 9, line 8).

In regard to claim 30, Court et al. teach 2400 and 2500 g/mol as suitable molar masses for the polyamide having an amine end group (col. 8, lines 34-47 and col. 9, lines 25-34), values that fall within the claimed range of between 1,000 and 5,000.

In regard to claims 31-33, the graft copolymer of Court et al. has the claimed structure (nanostructured organization with polyamide lamellae having a thickness of between 10 and 50

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nanometers) because Court. et al. discloses a polyolefin-polyamide graft copolymer that is produced in the same way that the polyolefin-polyamide graft copolymer of the instant application is produced, and that has the same structure as the polyolefin-polyamide graft copolymer of the instant application (see entire Court. et al. reference, including col. 8, lines 1-4 and col. 5, lines 5-16).

In further regard to claim 33, Court et al. teach 2400 and 2500 g/mol as suitable molar masses for the polyamide having an amine end group (col. 8, lines 34-47 and col. 9, lines 25-34), values that fall within the claimed range of between 1,000 and 5,000.

In regard to independent claim 34, Schmitz et al. teach a multilayer structure comprising a first layer (layer I of Schmitz et al.) comprising a polyamide (col. 1, lines 51-54) and a second layer (layer II of Schmitz et al.) comprising a graft copolymer having polyamide blocks, a polyolefin backbone, and a polyamide graft where the structure and composition of the graft copolymer corresponds to that of the claimed graft copolymer in its final form (col. 1, lines 51-67 and col. 3, lines 7-37). The graft copolymer is obtained by reaction between a polyamide having an amine end group and the residue of the unsaturated monomer having a functional group capable of reacting with the amine end group of the polyamide (col. 3, lines 15-30), and the unsaturated monomer is attached to the polyolefin backbone by grafting or copolymerization via its double bond (col. 3, lines 24-30).

Schmitz et al. fail to teach that the polyamide graft is from a polyamide having an amine end group and that the amine end group has a molar mass of between 1,000 and 5,000 g/mol.

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Court et al. teach the claimed multilayer structure (see entire Court. et al. reference, including col. 6, lines 46-50 and col. 5, lines 12-16). Court. et al. teach that the article comprises at least one layer of the composition comprising the polyolefin-polyamide graft copolymer (col. 3, lines 4-10), and an article comprising two or more layers of the composition comprising the polyolefin-polyamide graft copolymer since the polyolefin-polyamide graft copolymer is a polyamide (in regard to layer (1)), so the embodiments of Court et al. comprising two or more layers of the composition comprising the polyolefin-polyamide graft copolymer anticipates the claim. Court et al. teach that the polyamide graft is from a polyamide having an amine end group (see, for example, col. 21, lines 35-36 and col. 5, lines 12-16). The polyolefin-polyamide graft copolymer of Court et al. (which is a polymer) consists of the polyolefin-polyamide graft copolymer, so “the polymer consists of [the] graft copolymer having polyamide blocks”. Court et al. teach 2400 and 2500 g/mol as suitable molar masses for the polyamide having an amine end group (col. 8, lines 34-47 and col. 9, lines 25-34), values that fall within the claimed range of between 1,000 and 5,000.

Court et al. teach that the polyamide graft is from a polyamide having an amine end group results in exceptional thermomechanical properties (see, for example, col. 2, lines 1-7). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the polyolefin-polyamide graft copolymer having a polyamide graft that is from a polyamide having an amine end group having a molar mass of 2400 or 2500 of Court as the polyolefin-polyamide graft copolymer of Schmitz et al. since polyolefin-polyamide graft copolymer having a polyamide graft that is from a polyamide having an amine end group is a

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known polyolefin-polyamide graft copolymer for exceptional thermomechanical properties as taught by Schmitz et al.

In regard to independent claim 36, Schmitz et al. teach a multilayer structure comprising a first layer (layer I of Schmitz et al.) comprising a polyamide (col. 1, lines 51-54) and a second layer (layer II of Schmitz et al.) comprising a graft copolymer having polyamide blocks, a polyolefin backbone, and a polyamide graft where the structure and composition of the graft copolymer corresponds to that of the claimed graft copolymer in its final form (col. 1, lines 51-67 and col. 3, lines 7-37). The graft copolymer is obtained by reaction between a polyamide having an amine end group and the residue of the unsaturated monomer having a functional group capable of reacting with the amine end group of the polyamide (col. 3, lines 15-30), and the unsaturated monomer is attached to the polyolefin backbone by grafting or copolymerization via its double bond (col. 3, lines 24-30).

Schmitz et al. fail to teach that the polyamide graft is from a polyamide having an amine end group and that the graft copolymer has a nanostructured organization with polyamide lamellae having a thickness of between 10 and 50 nanometers.

Court et al. teach the claimed multilayer structure (see entire Court. et al. reference, including col. 6, lines 46-50 and col. 5, lines 12-16). Court. et al. teach that the article comprises at least one layer of the composition comprising the polyolefin-polyamide graft copolymer (col. 3, lines 4-10), and an article comprising two or more layers of the composition comprising the polyolefin-polyamide graft copolymer since the polyolefin-polyamide graft copolymer is a polyamide (in regard to layer (1)), so the embodiments of Court et al. comprising two or more

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layers of the composition comprising the polyolefin-polyamide graft copolymer anticipates the claim. Court et al. teach that the polyamide graft is from a polyamide having an amine end group (see, for example, col. 21, lines 35-36 and col. 5, lines 12-16). The polyolefin-polyamide graft copolymer of Court et al. (which is a polymer) consists of the polyolefin-polyamide graft copolymer, so “the polymer consists of [the] graft copolymer having polyamide blocks”.

Court et al. teach that the polyamide graft is from a polyamide having an amine end group results in exceptional thermomechanical properties (see, for example, col. 2, lines 1-7). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the polyolefin-polyamide graft copolymer having a polyamide graft that is from a polyamide having an amine end group of Court as the polyolefin-polyamide graft copolymer of Schmitz et al. since polyolefin-polyamide graft copolymer having a polyamide graft that is from a polyamide having an amine end group is a known polyolefin-polyamide graft copolymer for exceptional thermomechanical properties as taught by Schmitz et al.

The graft copolymer of Court et al. has the claimed structure (nanostructured organization with polyamide lamellae having a thickness of between 10 and 50 nanometers) because Court. et al. discloses a polyolefin-polyamide graft copolymer that is produced in the same way that the polyolefin-polyamide graft copolymer of the instant application is produced, and that has the same structure as the polyolefin-polyamide graft copolymer of the instant application (see entire Court. et al. reference, including col. 8, lines 1-4 and col. 5, lines 5-16).



***Response to Arguments***

14. Applicant's arguments regarding the 35 USC 102 and 103 rejections of the claims made of record in the previous Office Action mailed June 10, 2009 have been fully considered but are not persuasive.

Some of Applicant's arguments depend on the presupposition that the claim language closes the scope of the composition of the layer (2) to compositions that have solely one polymer (the graft copolymer). However, the claim language does not limit the scope of the composition of the layer (2) to compositions that have solely the graft copolymer. The claim language "a polymeric layer (2) wherein the polymer consists of a graft copolymer having polyamide blocks" limits "the polymer" to solely the graft copolymer, but does not limit the polymeric layer to having solely one polymer. Given that the current claim language allows for more than one polymer in the polymeric layer (2), a blend of polymers where one of the polymers is the graft copolymer reads on the current claim language. If Applicant intends to limit the polymeric layer (2) to having one polymer, Applicant should amend the claim language so that this is recited in the claim language.

Applicant appears to argue that Schmitz does not teach a copolymer because it teaches "a mixture", but Schmitz does teach a copolymer. The copolymer is formed from the "mixture".

Applicant appears to argue that the copolymer of Court does not have the claimed nanostructure. However, the copolymer of Court (same assignee as the current application) appears to be compositionally identical to the copolymer of the current application, so the copolymer of Court has the same nanostructure as the copolymer of the current application, absent convincing evidence to the contrary.

***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is (571) 272-1488. The examiner can normally be reached on Monday-Thursday from 9:00am to 7:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Walter B Aughenbaugh /

Examiner, Art Unit 1794

10/10/09

/Rena L. Dye/

Supervisory Patent Examiner, Art Unit 1794